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Original Research Article.

Breast Feeding Among Married Female Family Medicine Trainees in Makkak Almukarramah, Jeddah and Taif, Saudi Arabia (2013-2014)

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ABSTRACT

Background: All health workers, particularly primary health care physicians (PHCPs), play an important role in the initiation and duration of breastfeeding. They should be able to promote breastfeeding, to provide appropriate information and to demonstrate a thorough practical knowledge of breastfeeding management.

Objectives: To assess knowledge attitude of family medicine female residents in Makkah Almukarramah, Jeddah, and Taif regarding breastfeeding.

Materials and Methods: This was a cross sectional study Included all female resident physicians being affiliated to family medicine unites within the Makkah Almukarramah, Jeddah, and Taif. Validated questionnaire was used for data collection including personal characteristics of the participants in addition to assessment of the knowledge, attitude and practice regarding breastfeeding of the last child.

Results: The study included 47 female residents. Their age ranged between 24 and 33 years with a mean of 28.6 and standard deviation of 1.8 years. Vast majority of family medicine residents (97.9%) initiated breastfeeding of their last "index" child. Executive breastfeeding during the first six months was reported by 19.6% of those reported breastfeeding. Mode of delivery is significantly associated with practicing executive breastfeeding as 12.1% of normally delivered physicians compared to 41.7% of those delivers by Caesarian section practiced exclusive breastfeeding, p=0.043. Physicians who had positive attitude towards breastfeeding tended to executively breastfed their children compared to those who had negative attitude towards it (30.8% versus 5%, p=0.031). Overall physicians` breastfeeding knowledge was good among 61.7 and excellent among 27.7% of them while it was unsatisfactory among 10.6% of them. Positive attitude towards breastfeeding was reported among slightly more than half of the female family medicine residents (55.3%) whereas negative attitude (score <68) was reported among 44.7% of them.

Conclusions: Despite the fact that most of the female family medicine residents had adequate information about optimal infant feeding, this did not translate into optimal feeding practice on their children.

Keywords: Breastfeeding, Knowledge, Attitude, Practice, Family Physicians, Females.

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INTRODUCTION

Breastfeeding is the first step in life which ensures that infants and young children get a healthy and nutritious start in life. It is one of the few consistent sources of energy-dense food, even into the second year of life.[1]

Breast milk has for a long time been recognized as the ideal food for babies. When given alone (i.e. exclusively), during the first 6 months of a baby's life, it leads to adequate growth and development, and reduces infant morbidity and mortality.[2] Promotion of exclusive breastfeeding in the first 4–6 months of life is one of the most effective interventions for improving child survival.[3] The mortality risk of artificially- fed infants is 3–5 times higher than for breastfed babies.[4] Breastfeeding is considered a life-saving practice in developing countries and has been reported to improve infant survival rates in poor countries.[5] Despite the well-known benefits, there is a well-documented decline in breastfeeding in many countries, especially developing ones. In contrast, a resurgence of breast- feeding in many industrialized countries has been noted.[6] Despite these recommendations, the breastfeeding goals for Healthy People 2010, that 75% of all new mothers initiate breastfeeding, 50% continue to 6 months, and 25% continue to 1 year, are unmet.[7] In developed countries, breastfeeding rates and duration are lower among women with lower income or education. In developing countries, women from higher socioeconomic strata breastfeed less.[8]

All health workers, particularly primary health care physicians (PHCPs), play an important role in the initiation and duration of breastfeeding. They should be able to promote breastfeeding, to provide appropriate information and to demonstrate a thorough practical knowledge of breastfeeding management.[9]

However, among the documented causes of decline in breastfeeding are the attitudes and practices of health workers, particularly physicians who are known to be ambivalent about breastfeeding.[10]

There are an increasing number of health professionals who are ill-educated with regard to breast-feeding and have misconceptions about human milk and a negative attitude towards breastfeeding.[11]

Additionally, health workers are not immune to popular beliefs and practices concerning breastfeeding and lactation that are deeply ingrained in many societies.[12]

This study aimed to assess knowledge and attitude of the female physicians in Makkah Almukarramah, Jeddah and Taif cities regarding breast feeding as well as to estimate the prevalence of breast feeding practice among them.

MATERIALS AND METHODS

Cross sectional design was adopted at the family medicine unites in Makkah Almukarramah, Jeddah, and Taif cities at the Western Region, Saudi Arabia. Because of limited number of family medicine unites at western region, all female residents were invited to participate in the study (n=47).

Validated questionnaire was used including personal characteristics of the participants (age, nationality, qualification, marital status, husband`s job, number of children, smoking, contraceptive use and mode of delivery) in addition to assessment of knowledge of physicians regarding breastfeeding: It was mainly adapted from Alina et al.[13] and Khassawneh et al.[14] Knowledge about breast feeding questionnaire includes 38 items, covering the following scopes of knowledge on breastfeeding: general knowledge, colostrum, advantages to mothers and babies, effective feeding method, duration of feeding, complementary feeding, problems with breastfeeding. Each item had categorical responses of yes, no, or do not know. A correct response will be scored as '1', whereas a wrong or do not know response will be scored as '0'. Total knowledge score range from 0 to 38, with higher scores indicating more knowledge. Knowledge of mothers whose scores are less than 60% (i.e., <19) was considered as "unsatisfactory", 60% to <85% (i.e., 19-28) was considered "good", while mothers' knowledge scores 85% or more (i.e., 29-38) was considered as "excellent".

The Iowa Infant Feeding Attitude Scale (IIFAS) measure was used. It was developed by De la Mora et al [15] as a measure of attitudes towards infant feeding. The scale consists of 17 items that assess attitudes toward breast and formula feeding. Using a Likert scale that ranges from 1 (strongly disagree) to 5 (strongly agree), participants respond to items regarding a variety of issues related to infant feeding. Approximately half of the items that were worded in manner favourable to formula feeding were reverse scored. Total attitude scores range from 17 to 85 with higher scores reflecting attitudes more positive towards breastfeeding. Median score was computed (it was 68). Those scored at or above the median were considered having positive attitude while those scored below the median were considered as having negative attitude towards breastfeeding.

Pattern of feeding practices during the first 6 months of her baby's life, (whether the mother exclusively breastfed her baby or not) was utilized.

The researcher distributed the self-administered questionnaire to the target population by direct contact with them. Care was taken to not disturb the healthcare workers duty. The researcher was available to clarify any issue and the questionnaires were collected soon after encounter. The data were verified by hand then coded and entered to a personal computer.

The data were collected and verified by hand then coded before computerized data entry. The statistical Package for Social Sciences (SPSS) software version 17.0 was used for data entry and analysis. Descriptive statistics (e.g. number, percentage, mean, range, standard deviation) and analytic statistics was applied using Chi Square tests (χ^2) to test for the association and/or the difference between two categorical variables. Fisher exact tests were applied for small frequencies. P-value equal or less than 0.05 was considered statistically significant

Table 1: Baseline characteristics of married female family medicine residents (n=47).

Basic characteristics		Frequency	Percentage
Age in years	**<30**	32	68.1
	≥30	15	31.9
Range		24-33	
mean±SD		28.6±1.8	
Marital status	**Married**	45	95.7
	Divorced	2	4.3
Number of children	**One**	19	40.4
	Two	18	38.3
	More than two	10	21.3
Nationality	**Saudi**	45	95.7
	Non-Saudi	2	4.3
Qualification	**MBBS**	42	89.4
	Board/equivalent	5	10.6
Age of the last child	**<one year**	11	23.4
	One-two years	14	29.8
	>two years	22	46.8
Husband`s job	**Physician**	17	36.2
	Non-physician	30	63.8

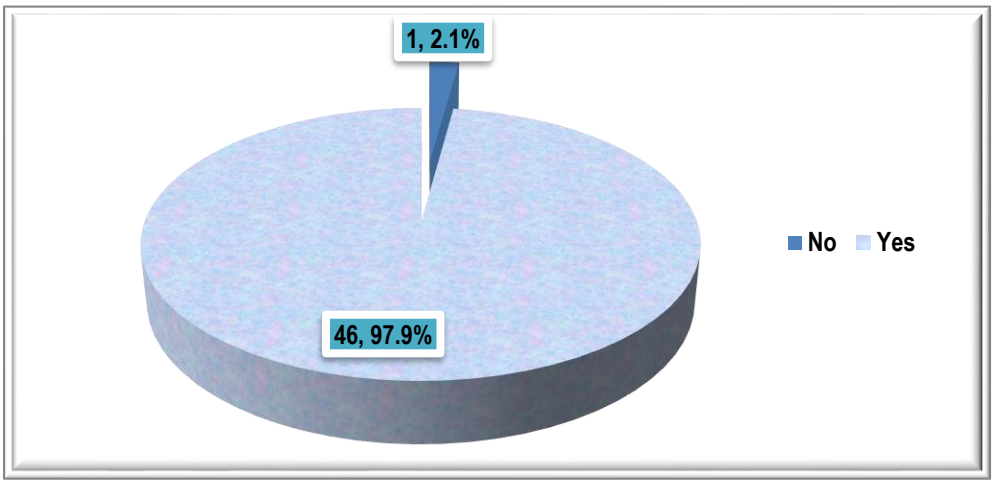

Figure 1: History of initiating breastfeeding of the index child among family medicine female residents Makkah Almukarramah, Jeddah, and Taif.

Table 2: Determinants of practice of executive breastfeeding

		Executive breastfeeding		p-value*
		No N=37 No. (%)	Yes N=9 No. (%)	
Age (years)	**<30 (n=31)**	26 (83.9)	5 (16.1)	0.320*
	≥30 (n=15)	11 (73.3)	4 (26.7)	
Nationality	**Saudi (n=44)**	35 (79.5)	9 (20.5)	0.643*
	Non-Saudi (n=2)	2 (100)	0 (0.0)	
Marital status	**Married (n=44)**	35 (79.5)	9 (20.5)	0.643*
	Divorced (n=2)	2 (100)	0 (0.0)	
Number of children	**One (n=18)**	14 (77.8)	4 (22.2)	0.690**
	Two (n=18)	14 (77.8)	4 (22.2)	
	More than two (n=10)	9 (90.0)	1 (10.0)	
Qualification	**MBBS (n=41)**	32 (78.0)	9 (22.0)	0.318*
	Board/equivalent (n=5)	5 (100)	0 (0.0)	
Husband`s job	**Physician (n=17)**	15 (88.2)	2 (11.8)	0.268*
	Non-physician (n=29)	22 (75.9)	7 (24.1)	
Smoking	**Smoker (n=3)**	3 (100)	0 (0.0)	0.512
	Non-smoker (n=43)	34 (79.1)	9 (20.9)	
Contraceptive use	**No (n=7)**	5 (71.4)	2 (28.6)	0.417
	Yes (n=40)	32 (82.1)	7 (17.9)	
Contraceptive method˚	**IUDs (n=10)**	9 (90.0)	1 (10.0)	0.895
	Tablets (n=26)	23 (88.5)	3 (11.5)	
Mode of delivery	**Normal vaginal (n=33)**	29 (87.9)	4 (12.1)	**0.043**
	Caesarian section (n=12)	7 (58.3)	5 (41.7)	
Breastfeeding knowledge	**insufficient (n=5)**	4 (80.0)	1 (20.0)	**0.902**
	Good (n=28)	22 (78.6)	6 (21.4)	
	Excellent (n=13)	11 (84.6)	2 (15.4)	
Breastfeeding attitude	**Negative (n=20)**	19 (95.0)	1 (5.0)	**0.031**
	Positive (n=26)	18 (69.2)	8 (30.8)	

***Fisher exact test; **Chi-square test; ˚Number=36**

RESULTS

The study included 47 female residents. Table 1 presents their baseline characteristics. Their age ranged between 24 and 33 years with a mean of 28.6 and standard deviation of 1.8 years. Majority of them (95.7%) were married, 40.4% of them had one child whereas 21.3% had more than two children. Majorities were Saudis (95.7%) and had MBBS qualification (89.4%). Age of the last child was over two years among 46.8% of them. The husbands of almost a third of them (36.2%) were physicians.

Almost a quarter of them (25.5%) delivered their last child through caesarean section. Three female family medicine residents were smokers representing 6.4% of the total participants. All of them smoked Moassel. Most of the female family medicine residents (85.1%) reported a history of contraceptive use and among 40 physicians used contraceptive methods, 10 used IUDs (25%) whereas 27 (67.5%) used tables and 2 (5%) used both methods.

As seen in figure 1, vast majority of family medicine residents (97.9%) initiated breastfeeding of their last "index" child. Executive breastfeeding during the first six months was reported by 19.6% of those reported breastfeeding. More than a third of them (39.1%) stopped breastfeeding before the age of 6 months. More than half of them (54.3%) reported that they breastfed their children on demands.

As shown in table 2, the only two significant factors associated with breastfeeding practice were mode of delivery and breastfeeding attitude as 12.1% of normally delivered physicians compared to 41.7 % of those delivers by Caesarian section practiced exclusive breastfeeding, p=0.043 and physicians who had positive attitude towards breastfeeding tended to executively breastfed their children compared to those who had negative attitude towards it (30.8% versus 5%), p=0.031.

Table 3: Knowledge regarding benefits of breastfeeding among family medicine female residents

STATEMENTS	Right answer	
	No.	%
TO BABIES:		
Breastfeeding reduces the risk of respiratory infection among babies (TRUE)	44	93.6
Breastfeeding increases the baby's intelligence (TRUE)	44	93.6
Breastfeeding helps to reduce the incidence of child abuse and neglect (TRUE)	38	80.9
Baby who received breastfeeding is less prone to get diarrhea (TRUE)	38	80.9
Breast milk provides baby with more protection from allergy compared to formula milk (FALSE)	32	68.1
Breastfeeding causes good development of baby's teeth and gum (FALSE)	27	57.4
TO MOTHERS:		
Exclusive breastfeeding is beneficial in spacing birth (TRUE)	43	91.5
Breastfeeding helps to stimulate uterine contraction (TRUE)	46	97.9
Mothers who practiced breastfeeding may achieve pre-pregnancy weight faster (TRUE)	40	85.1
Frequent breastfeeding may prevent breast engorgement (TRUE)	40	85.1
Mother who practiced breastfeeding has a low risk of getting breast cancer (FALSE)	40	85.1
Breastfeeding may protect against osteoporosis (FALSE)	31	66.0
KNOWLEDGE REGARDING COLOSTRUMS		
Colostrum is the mother's early milk, which is thick, sticky, and yellowish in colour (TRUE)	46	97.9
Colostrum is difficult to digest and needs to be discarded (FALSE)	42	89.4
Colostrum causes constipation among babies (FALSE)	38	80.9
Colostrum is not able to protect babies from jaundice (FALSE)	24	51.1
KNOWLEDGE REGARDING EFFECTIVE FEEDING		
Babies will gain weight if they receive effective feeding (TRUE)	40	85.1
Correct positioning helps to achieve effective breastfeeding (TRUE)	45	95.7
Babies sleep well after they receive adequate breastfeeding (TRUE)	43	91.5
DURATION OF FEEDING		
Breastfeeding should be initiated within 30 minutes after delivery (TRUE)	38	80.9
Breastfeeding should be given on demand (TRUE)	39	83.0
Baby should be allowed to breastfeed for at least 10–20 minutes for each feeding (TRUE)	40	85.1
Breastfeeding should be continued up to 2 years even though the baby has received complementary food (TRUE)	31	66.0
COMPLEMENTARY FEEDING		
Complementary feeding should be introduced at 6 months of age (TRUE)	43	91.5
Mothers may mix breastfeeding and formula feeding once baby starts taking complementary food (TRUE)	24	51.1
PROBLEMS WITH BREASTFEEDING	44	93.6
Breast milk production is influenced by breast size (FALSE)		
Mothers with inverted nipples cannot breastfeed their babies (FALSE)	37	78.7
Breastfeeding must be discontinued if mother has cracked nipple (FALSE)	38	80.9
Breastfeeding must be discontinued if baby has jaundice (FALSE)	40	85.1
Breastfeeding must be discontinued if mother has breast engorgement (FALSE)	42	89.4
Breast engorgement may be reduced with cold packs (TRUE)	15	31.9
The use of cabbage may help to reduce breast engorgement (TRUE)	10	21.3
BREAST MILK EXPRESSION		
Breast milk expression may be done every 3 hours (TRUE)	38	80.9
Expressed breast milk can be kept for 3 months in a freezer of a 2- door refrigerator (TRUE)	33	70.2
Expressed breast milk can be kept for 24-48 hours in a lower part of a refrigerator (TRUE)	32	68.1
It is necessary to express breast milk from one side of the breast only (FALSE)	31	66.0
Expressed breast milk can be mixed with the previous expressed milk (FALSE)	30	63.8
Expressed breast milk may be warmed on fire (FALSE)	38	80.9
Expressed breast milk can be warmed in microwave (FALSE)	35	74.5
The leftover expressed breast milk that has been used may be stored again (FALSE)	34	72.3
PRACTICAL ASPECTS OF BREASTFEEDING		
Exclusive breastfeeding must be practiced until the infant is 6 months old (TRUE)	46	97.9
Breast massage may reduce breast engorgement (TRUE)	42	89.4
Giving water to baby is encouraged after every breastfeeding (FALSE)	22	46.8
Belching after feeding shows that the baby is full (FALSE)	25	53.2
Babies who get enough feeding will pass urine more frequently (FALSE)	36	76.6
-Baby may also be given formula milk in the first 6 months of age (FALSE)	31	66.0
Oral thrush frequently happens to babies who breastfeed (FALSE)	29	61.7

Table 4: Attitude of female family medicine residents in Makkah Almukarramah, Jeddah, Taif towards breastfeeding.

	Strongly agree N (%)	Agree N (%)	Neutral N (%)	Disagree N (%)	Strongly disagree N (%)
▪ The benefits of breastfeeding last only as long as the baby is breast-fed	5 (10.6)	7 (14.9)	3 (6.4)	17 (36.2)	15 (31.9)
▪ Formula feeding is more convenient than breastfeeding	2 (4.3)	8 (17.0)	2 (4.3)	16 (34.0)	19 40.4)
▪ Breastfeeding increase mother infant bonding	39 (83.0)	6 (12.8)	0 (0.0)	0 (0.0)	2 (4.2)
▪ Breast milk is lacking in iron	4 (8.5)	13 (27.7)	11 (23.4)	14 (29.8)	5 (10.6)
▪ Formula fed babies are more likely to be overfed than breastfed babies	12 (25.5)	21 (44.7)	7 (14.9)	5 (10.6)	2 (4.3)
▪ Formula feeding is the better choice if the mother plans to go back to work	5 (10.6)	5 (10.6)	13 (27.7)	14 (29.8)	10 (21.3)
▪ Mothers who formula feed miss one of the great joys of motherhood	25 (53.2)	10 (21.3)	9 (19.1)	1 (2.1)	2 (4.3)
▪ Women should not breastfeed in public places	1 (2.1)	0 (0.0)	11 (23.4)	23 (48.9)	12 (25.5)
▪ Breastfed babies are healthier than formula fed babies	32 (68.1)	10 (21.3)	4 (8.5)	0 (0.0)	1 (2.1)
▪ Breastfed babies are more likely to be overfed than formula fed babies	2 (4.3)	3 (6.4)	11 (23.4)	22 (46.8)	9 (19.1)
▪ Fathers feel left out if a mother breast-feeds	3 (6.4)	4 (8.5)	15 (31.9)	19 (40.4)	6 (12.8)
▪ Breast milk is the ideal food for babies	34 (72.3)	8 (17.0)	3 (6.4)	0 (0.0)	2 (4.3)
▪ Breast milk is more easily digested than formula	41 (87.2)	4 (8.5)	1 (2.1)	0 (0.0)	1 (2.1)
▪ Formula is as healthy for an infant as breast milk	1 (2.1)	1 (2.1)	6 (12.8)	18 (38.3)	21 (49.7)
▪ Breastfeeding is more convenient than formula	29 (61.7)	6 (12.8)	7 (14.9)	3 (6.4)	2 (4.3)
▪ Breast milk is cheaper than formula	39 (83.0)	6 (12.8)	1 (2.1)	0 (0.0)	1 (2.1)
▪ A mother who occasionally drinks alcohol should not breastfeed her baby	6 (12.8)	11 (23.4)	20 (42.6)	6 (12.8)	4 (8.5)

Breastfeeding Knowledge

Table 3 shows that the majority of mothers were aware of the benefits of the breastfeeding in increasing the baby's intelligence and helping to reduce the risk of respiratory infection among babies (93.6%). In addition, most of them recognized correctly that baby who received breastfeeding is less prone to get diarrhea and that breastfeeding helps to reduce the incidence of child abuse and neglect (80.9%). Regarding benefits of breastfeeding to the mothers, the vast majority of the participants were aware that breastfeeding helps to stimulate uterine contraction (97.9%) and exclusive breastfeeding is beneficial in spacing birth (91.5%). Most of them were aware that frequent breastfeeding may prevent breast engorgement and mothers who practiced breastfeeding may achieve pre-pregnancy weight faster (85.1%). it is evident that the knowledge of participated physicians regarding colostrums is sufficient except that colostrums are able to protect babies from jaundice (48.9%). The knowledge of physicians regarding effective breastfeeding is sufficient as more than 85% of them were aware that babies will gain weight if they receive effective feeding and more than 90% were aware that correct positioning helps to achieve effective breastfeeding and babies sleep well after they receive adequate breastfeeding. On the other hand, their knowledge regarding breastfeeding duration is less (ranged between 66% to 85.1%). Their knowledge regarding complementary feeding is variable as 91.5% of them were aware that complementary feeding should be introduced at 6 months of age while 51.1% recognized that they may mix breastfeeding and formula feeding once baby starts taking complementary food. Regarding problems with breastfeeding is variable. For example, only 21.3% answered that the use of cabbage may help to reduce breast engorgement, and 31.9% reported that breast engorgement may be reduced with cold packs while 93.6% of them recognized that breast milk production is not influenced by breast size and 89.4% of them were aware that breastfeeding must be continued if mother has breast engorgement. The knowledge of physicians regarding breast milk expression is sufficient in some points as breast milk expression may be done every 3 hours and expressed breast milk not warmed on fire (80.9%), expressed breast milk cannot be warmed in microwave (74.5%) and the leftover expressed breast milk that has been used should not stored again (72.3%). The knowledge of physicians regarding practical aspects of breastfeeding is sufficient in some of them as exclusive breastfeeding must be practiced until the infant is 6 months old (97.9%), massage may reduce breast engorgement (89.4%) while it was insufficient in other aspects as belching after feeding shows that the baby is not full (53.2%) and giving water to baby is not encouraged after every breastfeeding (46.8%).

Overall, the knowledge score of physicians regarding breastfeeding ranged between 23 and 45 out of 47 with a mean of 36.1±5.3. Figure 2 demonstrates that overall physicians` breastfeeding knowledge was good among 61.7 of them and excellent among 27.7% of them while it was unsatisfactory among 10.6% of the physicians. None of the studied factors (age, marital status, number of children, nationality, qualification, age of the last child and husband`s job) was significantly associated with breastfeeding knowledge among female family medicine residents.

Attitude Towards Breastfeeding

From table 4, it is seen that the majority of female family medicine residents either agreed or strongly agreed that breastfeeding increase mother infant bonding (95.8%), breast milk is more easily digested than formula (95.7%) and breast milk is cheaper than formula (95.8%). Most of them either agreed or strongly agreed that breast milk is the ideal food for babies (89.3%), breastfed babies are healthier than formula fed babies (89.4%),

breastfeeding is more convenient than formula (74.5%), mothers who formula feed miss one of the great joys of motherhood (74.5%) and formula fed babies are more likely to be overfed than breastfed babies (70.2%). The overall attitude score ranged between 17 and 85 with a median of 68. Positive attitude (score ≥68) was reported among slightly more than half of the female family medicine residents (55.3%) whereas negative attitude (score <68) was reported among 44.7% of them as shown in figure 3. None of the studied factors (age, marital status, number of children, nationality, qualification, age of the last child and husband`s job) was significantly associated with attitude of female family medicine residents towards breastfeeding.

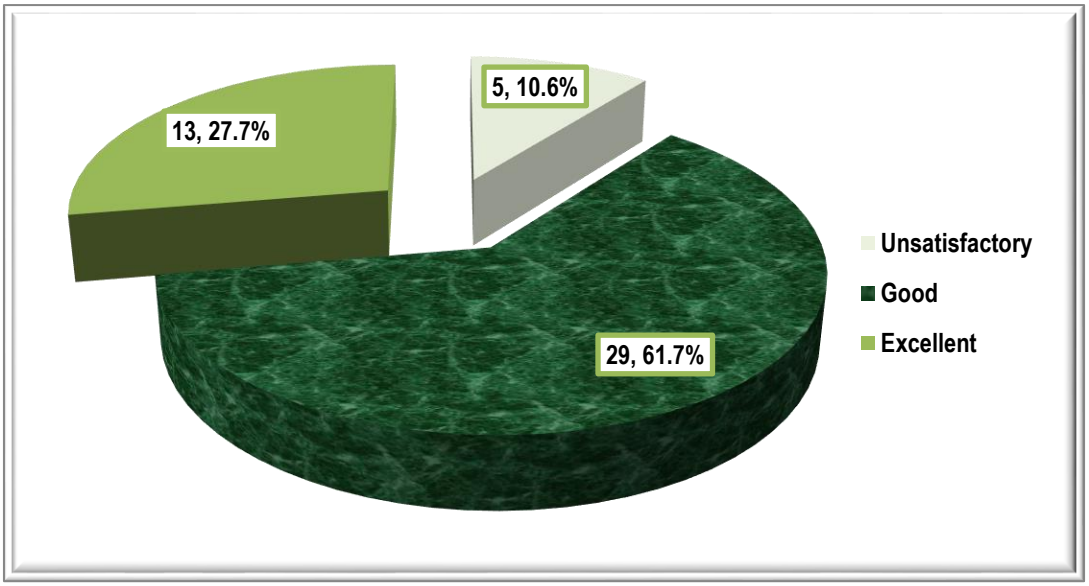

Figure 2: Overall breastfeeding knowledge among family medicine female residents, Makkah Almukarramah, Jeddah, and Taif.

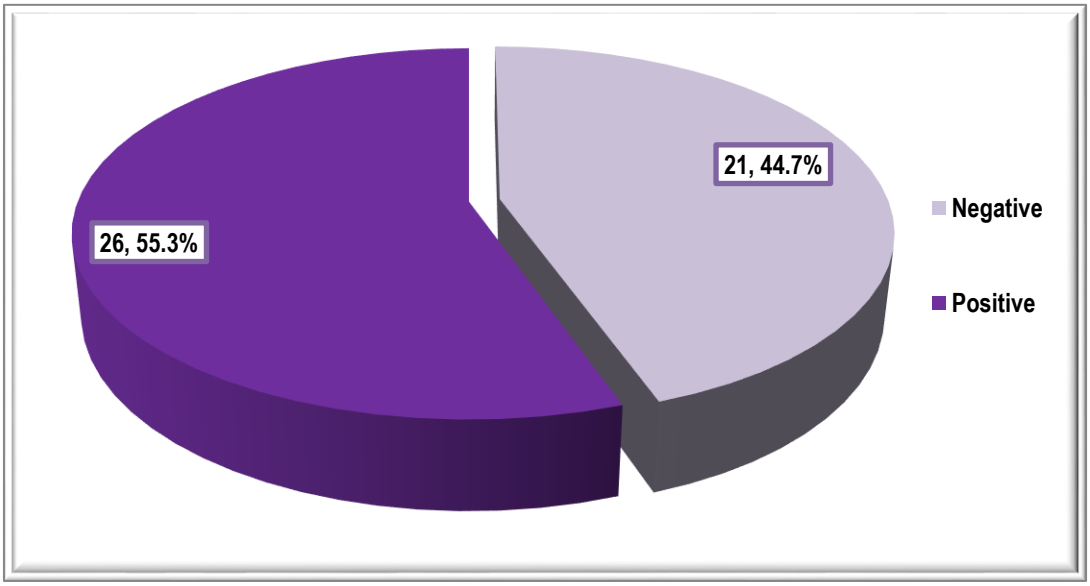

Figure 3: Attitude of female family medicine residents in Makkah Almukarramah, Jeddah, and Taif towards breastfeeding.

DISCUSSION

The breastfeeding initiation rate of female physician respondents (97.9%) is much higher than the initiation rate for women in general in Newfoundland and
Labrador (63%),[16] higher than Canadian women (85%).[17] and slightly higher than female physicians (93% and 80%) in other studies.[18,19] However, it is comparable to figure reported among physician`s mothers in Canada (96.6%).[20]

In a study conducted among female school teachers in Abha,[21] the breastfeeding initiation rate was found to be 100%, which is similar to a study of health care workers in the same area (south western Saudi Arabia).[22] Other Saudi Arabian studies have reported breastfeeding initiation rates ranging between 92 and 98%. [23-25]

In the present study, More than 60% of the family medicine residents breastfed for 6 months or longer, which is longer than the duration of breastfeeding in other studies of female physicians.[19]

It is quite encouraging that physician mothers initiated and continued breastfeeding for such long periods. Frank suggested that practicing healthy behavior oneself as a physician was a powerful predictive factor for counseling patients about prevention

issues.[26] This might also apply to breastfeeding. Physicians can serve as role models for their breastfeeding patients.

Although majority of the family medicine residents had adequate knowledge about the initiation, duration of breast feeding and the frequency of breast feeding we observed knowledge gaps in some of the domains of breastfeeding. For example as many as 48.9% of respondents reported that mothers should not mix breastfeeding and formula feeding once baby starts taking complementary food. Also as many as 34% of respondents did not know that breast feeding should be carried out for 24 months or longer. Similar knowledge gaps have previously been identified in studies evaluating the knowledge, attitude and practices of health care workers.[27-29]

Not only are there knowledge gaps, there is a lack of conversion of knowledge into action. Exclusive breastfeeding rate for the study population was 19.6% which is higher than that reported among healthcare workers in another Saudi study (15.9%)[22] and among Nigerian physicians (11.1%).[29] However, it is less than that of the general population in some countries. An Iranian study reported rates of 56.8% and 27.7% at 4 and 6 months of age, respectively, at the national level.[30] In Aqaba, Jordan, the exclusive breastfeeding rate was 46% for infants in the first 6 months of life.[31] In Egypt a rate of 42.5% was reported among infants less than 4 months of age.[32] In Bangladesh showed that this rate gradually declined from 87.1% at 1 month to 77.2% at 3 months and 61.4% at 6 months.[33] In the United States, only 13.3% of infants were exclusively breastfed at 6 months of age.[34] It has been commented that exclusive breastfeeding in the first 4 months of life varies from 1% to 90%, depending on where the baby is born; this variability is influenced by cultural beliefs, socioeconomic status, ethnicity, education, urbanization, modernization, and local feeding practices.[35,36] In addition, in Luxembourg, Netherlands and Austria, 54%, 37% and 46% of mothers exclusively breastfed their newborn, respectively.[37]

This relatively low rate of exclusive breastfeeding among physicians means that exposure to knowledge has not significantly affected the practice of these doctors. It may be instructive to find out the factors that determine the practice of these doctors. Contrary to others, we found that operative delivery positively affects the adoption of exclusive breastfeeding in comparison with spontaneous vaginal delivery. Previous studies reported the negative effect of cesarean section on exclusive breastfeeding.[38-41] Other studies did not find such association.[42,43] The explanation of this finding in not clear and needs further investigation on larger sample size.

In the current study, physicians who had positive attitude towards breastfeeding were more likely to exclusively breastfed their newborns. The inability of female medical doctors to successfully practice exclusive and optimal breastfeeding may impair their ability and effectiveness in promoting and supporting breastfeeding among their patients in particular and society in general. Several studies have shown that medical personnel with personal experience of breast feeding have better attitudes towards breast feeding and are more likely to recommend policies supportive of breast feeding.[44,45]

This study includes only family medicine residents in one region of the Saudi Arabia, and the results may not be representative of the whole female physicians all over the kingdom. In addition, the study findings merely convey associations rather than inferences because of the study design adopted (cross-sectional); a prospective cohort design would be more appropriate. Finally, the small sample size did not allow us to achieve significant association between background factors from one side and knowledge and attitude towards breastfeeding from the other side.

In conclusion, we note that despite the fact that most of the female family medicine residents had adequate information about optimal infant feeding this did not translate into optimal feeding practice on their children. Furthermore, this study confirmed the relationship between positive attitude towards breastfeeding and executive breastfeeding. The knowledge -practice disconnect may have wider implications as discussed.

Efforts should be geared towards equipping and empowering young female physicians to enable them feed their own infants optimally. Of vital importance, however, is dispelling the misperceptions that physicians may hold towards breastfeeding. Promoting not only breastfeeding initiation but also extending breastfeeding duration as mentioned in Holly Quran. Muslim communities are expected to support, promote, and protect breastfeeding based on religious recommendations.

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